In the Matter of	)	
	)	
Replacement of Part 90 by Part 88 to	)	**PR Docket No. 92-235**
Revise the Private Land Mobile Radio	)	
Services and Modify the Polices	)	
Governing Them	)	

COMMENTS BY STATE OF COLORADO DIVISION OF TELECOMMUNICATIONS

INTRODUCTION

These comments are being submitted by the State of Colorado Division of Telecommunications. The Division is the Central agency for all telecommunications activities within the State government. The Division's functions include policy making, system design, installation and maintenance, and FCC licensing and compliance. The Division also provides these services to various local government agencies within the state.

Since the release of docket 92-235, our staff has spent a great deal of time meeting with both state and local government agencies to explain and discuss this proposed rule making. We believe that these comments are representative of not only the state, but also of the majority of the local government agencies within the state.

While the changes proposed in this NPRM will affect all land mobile radio users, these comments will focus on how they will affect "Public Safety". The state for the most part supports the changes proposed; however, there are several subjects that must be reconsidered to meet the needs of the public safety users.

The Division has been deeply involved in APCO Project 25. Project 25 is a joint effort of the Associated Public Safety Communications Officers Inc. (APCO), The National Association of State Telecommunications Directors (NASTD), federal government agencies and the Telecommunications Industries Association (TIA). Project 25 is developing new spectrum efficient standards for digital trunked radio systems for public safety. There has been a great deal of thought, research, time and manpower in the development of these standards. Much of what Project 25 has accomplished will easily mesh with the proposed changes.

However, there are many changes proposed that are contrary to Project 25. The State of Colorado fully supports Project 25 and all comments filed in this matter in support of Project 25 by APCO, NASTD and TIA. The state is currently in the planning and design phase of a statewide digital trunked radio system. The current planning is based on the concept that this digital trunked radio system will be a true "Statewide Public Safety System" shared by all state, local and federal government agencies. We anticipate the first phase to be installed within 2 years. It is crucial that any changes to the rules do not hinder or prevent Project 25 Standards systems from being implemented for public safety systems.

A. Spectrum Efficient Standards

We agree that new spectrum efficiency must be required. However, the different bandwidth proposed for the different bands will make it very difficult to implement a Project 25 based system in the bands with a 5 Khz bandwidth. It will not be possible for shared or interoperable systems with federal agencies which have adopted a 6.25 Khz bandwidth. **We propose that the bandwidth in the 150-174, 421-430, 450-470 bands use 6.25 Khz bandwidths**.

We support a two step process to achieve these bandwidths, but in a slightly different method than proposed. We propose the first step be to 12.5 Khz bandwidths. Project 25 standards require backward compatibility with analog wide band channels and forward compatibility with digital 12.5 Khz channels. This means a project 25 radio can operate on both 25 Khz analog channels and 12.5 Khz digital channels. Many of the major equipment vendors will have foward\backward compatible equipment available in the very near future. This will allow users to purchase new radios and replace existing radios with the ability to migrate to narrow band technology over the next several years. This process will have the least financial impact on the users. It will allow for a planned migration to the new spectrum efficient standards. Most public safety agencies operate on an eight to ten year equipment replacement cycle. While this method will not achieve the final 6.25 Khz bandwidth by the proposed dates, it will be the beginning of the process and, most important, will have the least financial impact. **We propose that step 1 be accomplished by all users in all areas of the country within 10 years of the Final Report and Order in these proceedings.**

Step 2 to migrate to 6.25 Khz. bandwidth could be achieved much the same way as Step 1, with equipment being forward compatible to 6.25 Khz channels as the technology is developed. Again, this will allow for a planned affordable migration with the least financial impact. Step 2 could be achieved within 20 years of the Final Report and Order.

B. Exclusivity

We support the concept of exclusive channel use. This will make it easier to implement a statewide system as we are currently planning. We support the exclusive use overlay plan with a different approach. With the narrow band migration plan we have proposed, exclusive overlay could be accomplished in the UHF channels by assigning the lower half of the wide band channel for non-exclusive use and the upper half for exclusive use. Specific loading and technical requirements would have to be met. Users who migrate to a narrow band operation prior to the required dates could have preference of the exclusive channel. This process would be more difficult in the VHF band in Step 1 of the migration plan and may require delaying exclusivity until Step 2.

Frequency coordinators should be able to determine if the user meets the requirements for exclusive channel assignments.

C. Consolidation of PLMR Services

While we support the concept of consolidation of the 19 services, the proposed new services and frequency pools do not totally meet the needs of public safety users. It is imperative that the channel allocations in the public safety service increase or maintain the same percentage of the total spectrum currently allocated to public safety. We believe a reduction in the allocations for public safety is contrary to both statutory and previous court rulings. The needs of public safety should be first and foremost in the allocation of channels to the new services.

While the new public safety service does not provide specific blocks for the various type of users (PP, PF, PH, PO, PL), there should be a method for priority assignments. We suggest that three sub categories be established. The first category would include all public safety services for the operation of shared centralized trunked systems (PS1). The second category would include those public safety services directly related to the life and property safety (PS2). The third allocation would be for all other public safety services (PS3). Users would be able to choose which category they wish to use. This method would allow single category systems while encouraging spectrum efficient multi-user, multi-category systems using centralized trunking.

D. ERP and HAAT Limits

While we believe that some limitations should be placed on the maximum ERP allowed, we do not support the proposed method based solely on HAAT. The

proposed ERP based on HAAT rule assumes that the earth is flat and that wide area systems are not used.

The premise that for wide area systems additional sites could be constructed has several flaws. The first is that not only would additional sites be required but it would also require additional channels for these sites. This would quickly use the new channels created by using narrow band technology. The second flaw is the assumption that additional tower sites are available. In many cities and counties local zoning ordinances prevent towers from being located in certain

separate the coordination to different coordinators as is currently done. With the three public safety sub-categories we have proposed, it would be possible to designate one coordinator for PS1 service and establish several coordinators for PS2 and PS3 services. It would be necessary for all PS coordinators to share a common database or develop a method for timely, accurate updates to each other's database. This would require more coordination and cooperation among the coordinators. Again, the end result of whatever process is used must provide timely, accurate, quality coordination services at reasonable fees.

F. Trunked Operations

We support the allowing of trunking on all frequency bands. Due to the terrain in Colorado, using VHF frequencies for trunking will allow the State to migrate to its planned statewide digital trunked system faster and at a lower cost than if 800 MHz frequencies are used. The proposal to allow trunking on only exclusive channels or with concurrence of all co-channel users within 50 miles again makes several wrong assumptions. The 50 Mile separation assumes that the earth is flat and co-channel assignments are based on distance only. As we proposed in our comments on ERP and HAAT the system must be designed to meet the users' requirements. If a user can design a system to be more spectrum efficient by using trunking and prevent harmful co-channel interference, it should be allowed and not based solely on distance.

G. UHF Offset Channels

We support retaining the UHF offset channel as proposed.

H. Emission Mask

We do not support the emission mask proposed. This mask does not support modulation techniques other than single sideband. **We support the emission mask proposed by APCO, NASTD and TIA for use in the Project 25 standards**. This mask will allow both analog and digital modulation as well as allow the new channels created from the splitting of existing channels to be co-located with interference. This will also eliminate most adjacent channel interference.

I. Loading Criteria in the 150-174 Mhz and 450-470 Mhz bands

While we support some method of channel loading requirements, the proposed requirements appear to be based on the assumption of analog voice usage only. With the migration to digital applications other than voice and centralized trunking, different loading requirements may be required for different applications.

J. Wide Band Paging

We do not support the continued use of wide band paging. The current trend in paging has shifted from voice paging to digital paging. By requiring paging to migrate to narrow band digital channels, the need for additional paging channels can be met. By using the Project 25 emission mask, most of the adjacent channel interference caused by wide band digital paging system will be eliminated. If the intent of the NPRM is to provide additional spectrum by using spectrum efficient technology, it should be applied to all services and users.

K. Mobile Relay Operation in the 150-174 Mhz Band

Section 88.473 does not authorize the use of mobile relay stations the 150-174 Mhz band. Current rules allow for this operation. By not authorizing mobile relay operation it will not be possible to use centralized trunking in this band. The rough terrain in Colorado makes mobile relay operation imperative. **We**

We have had a great deal of interest from federal government users in also sharing the State digital trunked radio system. We propose to add a rule section to allow the shared use of federal government agencies on a primary basis. We also propose the FCC work with IRAQ and NTIA to include authorization in their rules to allow primary sharing of FCC licensed systems by federal government agencies.

N. Financial Assistance

The total financial impact to the public safety agencies as a result of the rule